| A. Senior Personnel | |
|-------------------------------|-----------|
| Senior Personnel Count | 12.00 |
| Senior Personnel Calendar | 4.00 |
| Months | 4.00 |
| Senior Personnel Academic | 0.00 |
| Months | 0.00 |
| Senior Personnel Summer | 0.00 |
| Months | |
| Senior Personnel Amount | \$73,638 |
| B. Other Personnel | |
| Post Doctoral Scholars | |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar | 0.00 |
| Months | 0.00 |
| Post Doctoral Academic | 0.00 |
| Months | 0.00 |
| Post Doctoral Summer | 0.00 |
| Months | |
| Post Doctoral Amount | \$0 |
| Other Professionals | |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar | 0.00 |
| Months | |
| Other Professionals Academic | 0.00 |
| Months | |
| Other Professionals Summer | 0.00 |
| Months | Ф.О. |
| Other Professionals Amount | \$0 |
| Graduate Students | |
| Graduate Students Count | 12.00 |
| Graduate Students Amount | \$436,199 |
| Undergraduate Students | |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students | \$0 |
| Amount | ΨΟ |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages | |
| (A+B) | \$509,837 |
| C. Fringe Benefits | \$17,084 |
| 3 3 | |

| Total Salaries, Wages, Fringe | \$526,921 |
|---|-------------|
| Benefits $(A + B + C)$ | |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$26,004 |
| International | \$15,000 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs Travel | \$0 |
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$0 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$224,267 |
| Total Other Direct Costs (G) | \$224,267 |
| H. Total Direct Costs (A Through G) | \$792,192 |
| I. Indirect Costs* | \$407,808 |
| J. Total Direct and Indirect Costs (H + I) | \$1,200,000 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$1,200,000 |
| M. Cost Sharing Proposed Level | \$0 |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|------------------------------|-----------------------|
| MTDC - On Site - Research | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost

rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2107391 **Managing Division Abbreviation:** IIS

Amendment Number: 001

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Supplement Amendment Date: 03/25/2025 Amendment Number: 001 Proposal Number: 2505221 Amendment Description:

The purpose of this amendment is to:

- Add supplemental support to the award in the amount shown below in the Funding Information section.
- Extend the end date from 09/30/2025 to 12/31/2025.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 2107391 **Award Instrument:** Standard Grant

Award Date: 07/20/2021

Award Period of Performance: Start Date: 10/01/2021 End Date: 12/31/2025

Project Title: HCC: Medium: Improving Human-AI Collaboration on Decision-Making Tasks

Managing Division Abbreviation: IIS **Research and Development Award:** Yes

Funding Opportunity: NSF 20-591 Computer and Information Science and Engineering (CISE): Core

Programs

Assistance Listing Number(s) and Name(s): 47.070 Computer and Information Science and

Engineering (See Amendment 000 for source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$30,000 **Total Intended Award Amount:** \$1,200,000

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$1,230,000

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT

AND FELLOWS OF HARVARD COLLEGE

co-Principal Investigator:

Email:

Organization: PRESIDENT

AND FELLOWS OF HARVARD COLLEGE

co-Princinal Investigator:

Email:

Organization: PRESIDENT

AND FELLOWS OF HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)
Name: Tianay M. Robinson

Email: trobinso@nsf.gov Phone: (703) 292-7859 **Awarding Official**

Name: Tianay M. Robinson Email: trobinso@nsf.gov

Managing Program

Officer

Name: Todd Leen Email: tleen@nsf.gov Phone: (703) 292-7215

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to NSF Grant General Conditions (GC-1), dated 10/01/2024, available at https://www.nsf.gov/awards/managing/general conditions.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 3.00 |
| Senior Personnel Calendar Months | 0.00 |
| Senior Personnel Academic Months | 0.00 |

| Senior Personnel Summer | 0.00 |
|---|----------|
| Months | Φ0 |
| Senior Personnel Amount | \$0 |
| B. Other Personnel | |
| Post Doctoral Scholars | |
| Post Doctoral Count | 1.00 |
| Post Doctoral Calendar Months | 3.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$14,527 |
| Other Professionals | |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | • |
| Graduate Students Count | 0.00 |
| Graduate Students Amount | \$0 |
| Undergraduate Students | • |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students | ФО. |
| Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$14,527 |
| C. Fringe Benefits | \$3,225 |
| Total Salaries, Wages, Fringe Benefits (A + B + C) | \$17,752 |
| D. Equipment | \$0 |
| E. Travel | L |
| Domestic | \$0 |
| International | \$0 |
| F. Participant Support Costs | Ι ΨΟ |
| Participant Support Costs | |
| Stipends | \$0 |
| Participant Support Costs Travel | \$0 |
| Participant Support Costs Subsistence | \$0 |

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| Participant Support Costs Other | \$0 |
|---------------------------------|----------|
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$0 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$0 |
| Total Other Direct Costs (G) | \$0 |
| H. Total Direct Costs (A | ¢17.753 |
| Through G) | \$17,752 |
| I. Indirect Costs* | \$12,248 |
| J. Total Direct and Indirect | \$30,000 |
| Costs (H + I) | \$30,000 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) | \$30,000 |
| OR (J + K) | \$50,000 |
| M. Cost Sharing Proposed | \$0 |
| Level | Ψ0 |
| | |

Award Notice

Award Number (FAIN): 2417241

Managing Division Abbreviation: SES Amendment Number: 000

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 11/14/2024 Amendment Number: 000 Proposal Number: 2417241 Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above.

Funds provided for participant support may not be diverted by the awardee to other categories of expense without the prior written approval of the cognizant NSF Program Officer. Since participant support cost is not a normal account classification, the awardee organization must be able to separately identify participant support costs. It is highly recommended that separate accounts, sub-accounts, subtask, or sub-ledgers be established to accumulate these costs. The awardee should have written policies and procedures to segregate participant support costs.

AWARD INFORMATION

Award Number (FAIN): 2417241 Award Instrument: Continuing Grant

Award Date: 11/14/2024

Award Period of Performance: Start Date: 10/15/2024 End Date: 09/30/2027

Project Title: SBE-UKRI: Resource Rational Contractualism: A foundation for moral judgment and

decision making

Managing Division Abbreviation: SES **Research and Development Award:** Yes

Funding Opportunity: NSF 23-1 Proposal & Award Policies & Procedures Guide - PAPPG Assistance Listing Number(s) and Name(s): 47.075 Social, Behavioral, and Economic Sciences

(Predominant source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$212,203

Total Intended Award Amount: \$690,003

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$212,203 **Expenditure Limitation:** Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

| Fiscal Year | Increment Amount |
|-------------|------------------|
| 2026 | \$261,833 |
| 2027 | \$215,967 |

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT

AND FELLOWS OF HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)

Name: Tyffani N. Smith Email: tnsmith@nsf.gov

Phone: (703) 292-7046

Awarding Official Name: Tyffani N. Smith

Email: tnsmith@nsf.gov

Managing Program Officer

Name: Robert E O'Connor Email: roconnor@nsf.gov Phone: (703) 292-7263

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to NSF Grant General Conditions (GC-1), dated 10/01/2024, available at https://www.nsf.gov/awards/managing/general_conditions.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 1.00 |
| Senior Personnel Calendar Months | 0.50 |
| Senior Personnel Academic | 0.00 |

| Months | |
|--|-----------|
| Senior Personnel Summer | 0.00 |
| Months | |
| Senior Personnel Amount | \$12,738 |
| B. Other Personnel | |
| Post Doctoral Scholars | |
| Post Doctoral Count | 1.00 |
| Post Doctoral Calendar Months | 12.00 |
| Post Doctoral Academic | 0.00 |
| Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$65,000 |
| Other Professionals | |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar | 0.00 |
| Months | 0.00 |
| Other Professionals Academic | 0.00 |
| Months | |
| Other Professionals Summer | 0.00 |
| Months | ФО |
| Other Professionals Amount | \$0 |
| Graduate Students | 0.00 |
| Graduate Students Count | 0.00 |
| Graduate Students Amount | \$0 |
| Undergraduate Students | |
| Undergraduate Students Count | 6.00 |
| Undergraduate Students Amount | \$14,000 |
| | |
| Secretarial - Clerical Secretarial - Clerical Count | 0.00 |
| Spot by A & A & Spot state of the state of t | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other Count | 0.00 |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$91,738 |
| C. Fringe Benefits | \$18,086 |
| Total Salaries, Wages, Fringe Benefits $(A + B + C)$ | \$109,824 |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$6,000 |
| International | \$1,000 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs | |
| Travel | \$0 |
| | 1 |

| Participant Support Costs Subsistence | \$0 |
|---|-----------|
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$0 |
| Publication Costs | \$2,500 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$6,240 |
| Total Other Direct Costs (G) | \$8,740 |
| H. Total Direct Costs (A Through G) | \$125,564 |
| I. Indirect Costs* | \$86,639 |
| J. Total Direct and Indirect Costs (H + I) | \$212,203 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$212,203 |
| M. Cost Sharing Proposed Level | \$0 |
| | |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|-----------|--------------------|
| F&A | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2421119
Managing Division Abbreviation: IOS

Amendment Number: 000

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 08/14/2024 Amendment Number: 000 Proposal Number: 2421119 Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above.

It is the grantee's responsibility to ensure that any vertebrate animal work conducted under this award has Institutional Animal Care and Use Committee (IACUC) approval, where required, that the approval be from an organization that has a current Public Health Service-approved Animal Welfare Assurance, and that such approval remains valid at all times that vertebrate animal work is conducted under the award. See the NSF PAPPG Chapter II.D.4, for additional information. This condition extends to vertebrate animal work funded via use of a subaward. Failure to comply with this condition will result in suspension and/or termination of the award.

AWARD INFORMATION

Award Number (FAIN): 2421119 Award Instrument: Continuing Grant

Award Date: 08/14/2024

Award Period of Performance: Start Date: 10/01/2024 End Date: 09/30/2028

Project Title: Collaborative Research: EDGE CMT: Shared genetic and cellular mechanisms of

vertebrate limb and fin regeneration.

Managing Division Abbreviation: IOS

Research and Development Award: Yes

Funding Opportunity: NSF 21-546 Enabling Discovery through GEnomics

Assistance Listing Number(s) and Name(s): 47.074 Biological Sciences (Predominant source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$251,118

Total Intended Award Amount: \$334,824

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$251,118 Expenditure Limitation: Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

| Fiscal Year | Increment Amount |
|-------------|------------------|
| 2025 | \$83,706 |

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT AND FELLOWS OF HARVARD COLLEGE

COLLABORATIVE INFORMATION

| Proposal ID | Lead | PI Name | Organization |
|-------------|------|---------|---|
| 2421117 | Y | | Louisiana State University |
| 2421118 | N | | University of California, Irvine |
| 2421119 | N | | Harvard College, President & Fellows of Harvard University |

NSF CONTACT INFORMATION

Managing Grants

Official (Primary **Awarding Official**

Contact) Name: Termia M.

Millard Email:

Name: Vanessa L. Richardson Email: vlrichar@nsf.gov

Managing Program Officer Name: Matthew Fujita Email: mfujita@nsf.gov **Phone:** (703) 292-7814

tmillard@nsf.gov

Phone: (703) 292-7074

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 05/20/2024, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 21-546 Enabling Discovery through GEnomics.

| A. Senior Personnel | | |
|-------------------------------|----------|--|
| Senior Personnel Count | 3.00 | |
| Senior Personnel Calendar | 1.80 | |
| Months | 1.00 | |
| Senior Personnel Academic | 0.00 | |
| Months | 0.00 | |
| Senior Personnel Summer | 0.00 | |
| Months | 0.00 | |
| Senior Personnel Amount | \$23,220 | |
| B. Other Personnel | | |
| Post Doctoral Scholars | | |
| Post Doctoral Count | 0.00 | |
| Post Doctoral Calendar Months | 0.00 | |
| Post Doctoral Academic | 0.00 | |
| Months | 0.00 | |
| Post Doctoral Summer Months | 0.00 | |
| Post Doctoral Amount | \$0 | |
| Other Professionals | | |
| Other Professionals Count | 0.00 | |
| Other Professionals Calendar | 0.00 | |
| Months | 0.00 | |
| Other Professionals Academic | 0.00 | |
| Months | 0.00 | |
| Other Professionals Summer | 0.00 | |
| Months | 0.00 | |
| Other Professionals Amount | \$0 | |
| Graduate Students | | |

| | 0.00 |
|---|-----------|
| Graduate Students Count | 0.00 |
| Graduate Students Amount | \$0 |
| Undergraduate Students | 0.00 |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 3.00 |
| Other Amount | \$61,839 |
| Total Salaries and Wages (A+B) | \$85,059 |
| C. Fringe Benefits | \$30,531 |
| Total Salaries, Wages, Fringe | \$115,590 |
| Benefits $(A + B + C)$ | |
| D. Equipment | \$0 |
| E. Travel | Φ.Δ. |
| Domestic | \$0 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs Travel | \$0 |
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$33,000 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$0 |
| Total Other Direct Costs (G) | \$33,000 |
| H. Total Direct Costs (A Through G) | \$148,590 |
| I. Indirect Costs* | \$102,528 |
| J. Total Direct and Indirect Costs (H + I) | \$251,118 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$251,118 |

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| M. Cost Sharing Proposed Level |
|--------------------------------|
|--------------------------------|

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|-------------------------------|-----------------------|
| Modified Total Direct Cost | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2421461

Managing Division Abbreviation: EFMA Amendment Number: 000

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 07/22/2024 Amendment Number: 000 Proposal Number: 2421461 Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above.

Funds provided for participant support may not be diverted by the awardee to other categories of expense without the prior written approval of the cognizant NSF Program Officer. Since participant support cost is not a normal account classification, the awardee organization must be able to separately identify participant support costs. It is highly recommended that separate accounts, sub-task, or sub-ledgers be established to accumulate these costs. The awardee should have written policies and procedures to segregate participant support costs.

AWARD INFORMATION

Award Number (FAIN): 2421461 **Award Instrument:** Standard Grant

Award Date: 07/22/2024

Award Period of Performance: Start Date: 11/01/2024 End Date: 10/31/2027

Project Title: TRAILBLAZER: Biodegradable Living Materials

Managing Division Abbreviation: EFMA **Research and Development Award:** Yes

Funding Opportunity: NSF 23-629 NSF Trailblazer Engineering Impact Award (TRAILBLAZER) Assistance Listing Number(s) and Name(s): 47.041 Engineering Grants (Predominant source of

funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$2,972,873

Total Intended Award Amount: \$2,972,873

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$2,972,873 Expenditure Limitation: Not Applicable

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT AND FELLOWS OF

HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact) Name: Tamika Lloyd Email: tlloyd@nsf.gov

Phone:

Awarding Official Name: Willis Phan

Email: wiphan@nsf.gov

Managing Program Officer

Name: Alias Smith Email: alismith@nsf.gov **Phone:** (703) 292-8367

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 05/20/2024, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 23-629 NSF Trailblazer Engineering Impact Award (TRAILBLAZER).

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 3.00 |
| Senior Personnel Calendar Months | 6.00 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer Months | 0.00 |

| G : P 1A | Ф100 2 00 | |
|--|------------------|--|
| Senior Personnel Amount | \$189,390 | |
| B. Other Personnel | | |
| Post Doctoral Scholars | | |
| Post Doctoral Count | 6.00 | |
| Post Doctoral Calendar | 36.00 | |
| Months | | |
| Post Doctoral Academic | 0.00 | |
| Months | | |
| Post Doctoral Summer Months | 0.00 | |
| Post Doctoral Amount | \$405,835 | |
| Other Professionals | Ψ405,655 | |
| Other Professionals Count | 0.00 | |
| | 0.00 | |
| Other Professionals Calendar Months | 0.00 | |
| Other Professionals Academic Months | 0.00 | |
| Other Professionals Summer Months | 0.00 | |
| Other Professionals Amount | \$0 | |
| Graduate Students | Ψ0 | |
| Graduate Students Count | 12.00 | |
| Graduate Students Amount | \$624,361 | |
| Undergraduate Students | Ψ024,301 | |
| Undergraduate Students Count | 0.00 | |
| Undergraduate Students Undergraduate Students | | |
| Amount | \$0 | |
| Secretarial - Clerical | | |
| Secretarial - Clerical Count | 0.00 | |
| Secretarial - Clerical Amount | \$0 | |
| Other | ** | |
| Other Count | 0.00 | |
| Other Amount | \$0 | |
| Total Salaries and Wages | \$1,219,586 | |
| (A+B) | | |
| C. Fringe Benefits | \$127,973 | |
| Total Salaries, Wages, Fringe Benefits $(A + B + C)$ | \$1,347,559 | |
| D. Equipment | \$0 | |
| E. Travel | | |
| Domestic | \$52,500 | |
| International | \$0 | |
| F. Participant Support Costs | | |
| Participant Support Costs Stipends | \$42,000 | |
| Participant Support Costs Travel | \$0 | |

| \$24,000 |
|-------------|
| \$0 |
| 6.00 |
| \$66,000 |
| |
| \$150,000 |
| \$6,000 |
| \$0 |
| \$0 |
| \$0 |
| \$266,782 |
| \$422,782 |
| \$1,888,841 |
| \$1,084,032 |
| \$2,972,873 |
| \$0 |
| \$2,972,873 |
| \$0 |
| |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|-----------|--------------------|
| MTDC | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2121239

Managing Division Abbreviation: BCS Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 08/31/2021 Amendment Number: 000 Proposal Number: 2121239 Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above as modified by revised budget dated 07/20/2021.

AWARD INFORMATION

Award Number (FAIN): 2121239 Award Instrument: Standard Grant

Award Date: 08/31/2021

Award Period of Performance: Start Date: 01/01/2022 End Date: 12/31/2025

Project Title: Collaborative Research: HNDS-I: A global seafood trade network database for

sustainable food systems, human health, and nutrition security

Managing Division Abbreviation: BCS **Research and Development Award:** Yes

Funding Opportunity: NSF 21-514 Human Networks and Data Science

CFDA Number and Name: 47.075 Social, Behavioral, and Economic Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$114,760

Total Intended Award Amount: \$114,760

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$114,760 **Expenditure Limitation:** Not Applicable

PROJECT PERSONNEL

Principal Investigator: Email: **Institution:** Harvard University

COLLABORATIVE INFORMATION

| Proposal ID | Lead | PI Name | Institution |
|-------------|------|---------|---|
| 2121238 | Y | | The American University |
| 2121239 | N | | Harvard College, President & Fellows of Harvard University |

NSF CONTACT INFORMATION

Managing Grants

Official (Primary

Contact) Name: Christine Castell

Email:

ccastell@nsf.gov

Awarding Official Name: Willie M. Powell

Email: wpowell@nsf.gov

Managing Program Officer Name: Patricia Van Zandt Email: pvanzand@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 11/12/2020, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 21-514 Human Networks and Data Science.

| A. Senior Personnel | |
|---|---------------------------------------|
| Senior Personnel Count | 4.00 |
| Senior Personnel Calendar Months | 2.16 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer Months | 0.00 |
| Senior Personnel Amount | \$25,621 |
| B. Other Personnel | , |
| Post Doctoral Scholars | |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar Months | 0.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$0 |
| Other Professionals | · · · · · · · · · · · · · · · · · · · |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer | 0.00 |
| Months Other Professionals Amount | 40 |
| | \$0 |
| Graduate Students Graduate Students Count | 4.00 |
| | 3000000X 100 |
| Graduate Students Amount | \$40,000 |
| Undergraduate Students | 0.00 |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$65,621 |
| C. Fringe Benefits | \$6,329 |
| Total Salaries, Wages, Fringe Benefits $(A + B + C)$ | \$71,950 |
| D. Equipment | \$0 |
| * * | |

| E 75 1 | | |
|---|-----------|--|
| E. Travel | | |
| Domestic | \$0 | |
| International | \$0 | |
| F. Participant Support Costs | | |
| Participant Support Costs Stipends | \$0 | |
| Participant Support Costs Travel | \$0 | |
| Participant Support Costs Subsistence | \$0 | |
| Participant Support Costs Other | \$0 | |
| Total Number of Participants | 0.00 | |
| Total Participant Costs (F) | \$0 | |
| G. Other Direct Costs | | |
| Materials Supplies | \$0 | |
| Publication Costs | \$0 | |
| Consultant Services | \$0 | |
| Computer Services | \$0 | |
| Subawards | \$0 | |
| Other | \$0 | |
| Total Other Direct Costs (G) | \$0 | |
| H. Total Direct Costs (A Through G) | \$71,950 | |
| I. Indirect Costs* | \$42,810 | |
| J. Total Direct and Indirect Costs (H + I) | \$114,760 | |
| K. Fees | \$0 | |
| L. Total Amount of Request (J) OR (J + K) | \$114,760 | |
| M. Cost Sharing Proposed Level | \$0 | |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|--------------------------------|-----------------------|
| Modified Total Direct Costs | 59.5000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2123965 **Managing Division Abbreviation:** CCF

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 06/08/2021 Amendment Number: 000 Proposal Number: 2123965 Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above .

The project must ensure that one or more of the PIs, Co-PIs, senior personnel, senior graduate students, and/or postdoctoral researchers funded under this grant will attend, and actively participate in, the FMiTF PI meeting to be held in 2023.

Incentive payments or gifts to participants must be made in accordance with written institutional policies and procedures and supported by auditable documentation. The allowability of these costs will ultimately be based on the awardee institution's ability to adequately demonstrate that the incentives have been disbursed in accordance with its policies and procedures.

AWARD INFORMATION

Award Number (FAIN): 2123965 Award Instrument: Standard Grant

Award Date: 06/08/2021

Award Period of Performance: Start Date: 10/01/2021 End Date: 09/30/2025

Project Title: Collaborative Research: FMitF: Track I: Usable Synthesis-based End-User Programming

with Rich Interaction Modalities

Managing Division Abbreviation: CCF **Research and Development Award:** Yes

Funding Opportunity: NSF 20-613 Formal Methods in the Field

CFDA Number and Name: 47.070 Computer and Information Science and Engineering

FUNDING INFORMATION

Amount Obligated by this Amendment: \$350,000

Total Intended Award Amount: \$350,000

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$350,000 Expenditure Limitation: Not Applicable

PROJECT PERSONNEL

Principal Investigator: Email: **Institution:** Harvard University

COLLABORATIVE INFORMATION

| Proposal ID | Lead | PI Name | Institution |
|-------------|------|---------|---|
| 2123654 | Y | | Regents of the University of Michigan |
| 2123965 | N | | Harvard College, President & Fellows of Harvard University |

NSF CONTACT INFORMATION

Managing Grants

Official (Primary

Contact)

Name: Daniel P McEnrue

Email:

dpmcenru@nsf.gov

Awarding Official Name: Daniel P McEnrue

Email: dpmcenru@nsf.gov

Managing Program Officer

Name: Dan R. Cosley Email: dcosley@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 11/12/2020, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 20-613 Formal Methods in the Field.

| A. Senior Personnel | | |
|--|-----------|--|
| Senior Personnel Count | 4.00 | |
| Senior Personnel Calendar Months | 1.00 | |
| Senior Personnel Academic Months | 0.00 | |
| Senior Personnel Summer Months | 0.00 | |
| Senior Personnel Amount | \$14,202 | |
| B. Other Personnel | | |
| Post Doctoral Scholars | | |
| Post Doctoral Count | 0.00 | |
| Post Doctoral Calendar Months | 0.00 | |
| Post Doctoral Academic Months | 0.00 | |
| Post Doctoral Summer Months | 0.00 | |
| Post Doctoral Amount | \$0 | |
| Other Professionals | | |
| Other Professionals Count | 0.00 | |
| Other Professionals Calendar Months | 0.00 | |
| Other Professionals Academic Months | 0.00 | |
| Other Professionals Summer Months | 0.00 | |
| Other Professionals Amount | \$0 | |
| Graduate Students | | |
| Graduate Students Count | 4.00 | |
| Graduate Students Amount | \$129,315 | |
| Undergraduate Students | | |
| Undergraduate Students Count | 0.00 | |
| Undergraduate Students Amount | \$0 | |
| Secretarial - Clerical | | |
| Secretarial - Clerical Count | 0.00 | |

| Secretarial - Clerical Amount | \$0 |
|---|------------|
| Other | 5 0 |
| Other Count | 0.00 |
| | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$143,517 |
| C. Fringe Benefits | \$3,296 |
| Total Salaries, Wages, Fringe Benefits (A + B + C) | \$146,813 |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$5,036 |
| International | \$14,964 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs | PO |
| Travel | \$0 |
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$0 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$64,636 |
| Total Other Direct Costs (G) | \$64,636 |
| H. Total Direct Costs (A | \$231,449 |
| Through G) | \$251,447 |
| I. Indirect Costs* | \$118,551 |
| J. Total Direct and Indirect Costs (H + I) | \$350,000 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$350,000 |
| M. Cost Sharing Proposed Level | \$0 |

*Indirect Cost Rates

| Item Name | Indirect Cost |
|-----------|---------------|
|-----------|---------------|

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| | Rate |
|------------------------------|----------|
| MTDC - On Site - Research | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2127882 Managing Division Abbreviation: CHE

Amendment Number: 001

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Creativity Extension

Amendment Date: 08/09/2024 Amendment Number: 001 Proposal Number: 2440743 Amendment Description:

The purpose of this amendment is to:

- Add additional support for creativity to the award in the amount shown below in the Funding Information section.
- Extend the end date from 08/31/2024 to 08/31/2025.
- The Foundation authorizes the awardee to enter into the proposed subaward arrangement. The subaward agreement should contain appropriate provisions in accordance with the award terms and conditions in effect at the time of this award amendment, and contain any special conditions included in this award.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 2127882 Award Instrument: Standard Grant

Award Date: 08/12/2021

Award Period of Performance: Start Date: 09/01/2021 End Date: 08/31/2025

Project Title: Collaborative Research: MFB: Deciphering the Logic of PTM Crosstalk via Novel

Chemical Technology: Histones and Beyond Managing Division Abbreviation: CHE Research and Development Award: Yes

Funding Opportunity: NSF 21-540 Molecular Foundations for Biotechnology

Assistance Listing Number(s) and Name(s): 47.049 Mathematical and Physical Sciences (See

Amendment 000 for source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$500,000 Total Intended Award Amount: \$1,500,000

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$2,000,000

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT

AND FELLOWS OF HARVARD COLLEGE

co-Principal Investigator:

Email:

Organization: WASHINGTON

UNIVERSITY, THE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)

Name: Pamela V. Conyers Email: pconyers@nsf.gov

Phone: (703) 292-5329

Awarding Official

Name: Denise M. Martin Email: dmartin@nsf.gov

Managing Program Officer

Name: Tingyu Li Email: tli@nsf.gov Phone: (703) 292-4949

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 05/20/2024, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

BUDGET

A. Senior Personnel

| Senior Personnel Count | 2.00 |
|---|-------------------------|
| Senior Personnel Calendar Months | 0.46 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer Months | 0.00 |
| Senior Personnel Amount | \$11,178 |
| B. Other Personnel | |
| Post Doctoral Scholars | |
| Post Doctoral Count | 2.00 |
| Post Doctoral Calendar Months | 100.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$71,429 |
| Other Professionals | Ψ/1,42) |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar | 0.00 |
| Months | 0.00 |
| Other Professionals Academic | |
| Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | |
| Graduate Students Count | 1.00 |
| Graduate Students Amount | \$49,211 |
| Undergraduate Students | |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students | \$0 |
| Amount | \$ 0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$131,818 |
| C. Fringe Benefits | \$28,198 |
| Total Salaries, Wages, Fringe Benefits (A + B + C) | \$160,016 |
| | \$0 |
| E. Travel | |
| Domestic | \$0 |
| International | \$0 |
| Total Salaries, Wages, Fringe Benefits (A + B + C) D. Equipment E. Travel Domestic | \$160,016 \$0 \$0 |

| F. Participant Support Costs | | |
|---|-----------|--|
| Participant Support Costs Stipends | \$0 | |
| Participant Support Costs Travel | \$0 | |
| Participant Support Costs Subsistence | \$0 | |
| Participant Support Costs Other | \$0 | |
| Total Number of Participants | 0.00 | |
| Total Participant Costs (F) | \$0 | |
| G. Other Direct Costs | | |
| Materials Supplies | \$36,747 | |
| Publication Costs | \$0 | |
| Consultant Services | \$0 | |
| Computer Services | \$0 | |
| Subawards | \$155,549 | |
| Other | \$11,103 | |
| Total Other Direct Costs (G) | \$203,399 | |
| H. Total Direct Costs (A Through G) | \$363,415 | |
| I. Indirect Costs* | \$136,585 | |
| J. Total Direct and Indirect Costs (H + I) | \$500,000 | |
| K. Fees | \$0 | |
| L. Total Amount of Request (J) OR (J + K) | \$500,000 | |
| M. Cost Sharing Proposed Level | \$0 | |

Award Notice

Award Number (FAIN): 2127882

Managing Division Abbreviation: CHE

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 08/12/2021 Amendment Number: 000 Proposal Number: 2127882 Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above .

The Foundation authorizes the awardee to enter into the proposed subaward arrangement and to fund the subaward with award funds up to the amount indicated in the approved budget or NSF-approved post award request. The subaward should contain appropriate provisions consistent with Appendix B of the Research Terms and Conditions (RTC) dated November 12, 2020, or Articles 8.a.4. and 9 of the NSF Grant General Conditions (GC-1) dated November 12, 2020 (as appropriate), as well as any special conditions included in this award.

AWARD INFORMATION

Award Number (FAIN): 2127882 **Award Instrument:** Standard Grant

Award Date: 08/12/2021

Award Period of Performance: Start Date: 09/01/2021 End Date: 08/31/2024

Project Title: Collaborative Research: MFB: Deciphering the Logic of PTM Crosstalk via Novel

Chemical Technology: Histones and Beyond Managing Division Abbreviation: CHE Research and Development Award: Yes

Funding Opportunity: NSF 21-540 Molecular Foundations for Biotechnology **CFDA Number and Name:** 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$1,500,000

Total Intended Award Amount: \$1,500,000

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$1,500,000 Expenditure Limitation: Not Applicable

PROJECT PERSONNEL

Principal Investigator:

Email:

Institution: Harvard

University

Co-Principal Investigator:

Email:

Institution: Washington

University

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)

Name: Pamela V. Convers

Email: pconyers@nsf.gov

Awarding Official

Name: Pamela V. Conyers Email: pconyers@nsf.gov

Managing Program Officer

Name: Max Funk Email: mfunk@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 11/12/2020, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 21-540 Molecular Foundations for Biotechnology.

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 6.00 |
| Senior Personnel Calendar Months | 1.80 |
| Senior Personnel Academic Months | 0.00 |

| Senior Personnel Summer Months | 0.00 |
|---|-----------|
| Senior Personnel Amount | \$42,874 |
| B. Other Personnel | Ψ74,077 |
| Post Doctoral Scholars | |
| Post Doctoral Count | 3.00 |
| Post Doctoral Calendar | 3.00 |
| Months | 36.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer | |
| Months | 0.00 |
| Post Doctoral Amount | \$177,154 |
| Other Professionals | , |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar | |
| Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | 20 |
| Graduate Students Count | 3.00 |
| Graduate Students Count Graduate Students Amount | |
| | \$64,656 |
| Undergraduate Students | 0.00 |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages $(A+B)$ | \$284,684 |
| C. Fringe Benefits | \$71,693 |
| Total Salaries, Wages, Fringe | , |
| Benefits $(A + B + C)$ | \$356,377 |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$0 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| * | |

| Participant Support Costs Travel | \$0 |
|---|-------------|
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$67,965 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$750,000 |
| Other | \$14,032 |
| Total Other Direct Costs (G) | \$831,997 |
| H. Total Direct Costs (A Through G) | \$1,188,374 |
| I. Indirect Costs* | \$311,626 |
| J. Total Direct and Indirect Costs (H + I) | \$1,500,000 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$1,500,000 |
| M. Cost Sharing Proposed Level | \$0 |
| | |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|---|-----------------------|
| MTDC Salaries&Fringe ,supplies and subaward base(10 months) | 69.0000% |
| MTDC Salaries&Fringe ,supplies and subaward base(2 months) | 69.5000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2129576

Managing Division Abbreviation: AGS

Amendment Number: 001

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Supplement Amendment Date: 12/19/2024 Amendment Number: 001 Proposal Number: 2513434 Amendment Description:

The purpose of this amendment is to:

• Add supplemental support to the award in the amount shown below in the Funding Information section.

Funds provided for participant support may not be diverted by the awardee to other categories of expense without the prior written approval of the cognizant NSF Program Officer. Since participant support cost is not a normal account classification, the awardee organization must be able to separately identify participant support costs. It is highly recommended that separate accounts, sub-accounts, subtask, or sub-ledgers be established to accumulate these costs. The awardee should have written policies and procedures to segregate participant support costs.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 2129576 Award Instrument: Standard Grant

Award Date: 11/09/2021

Award Period of Performance: Start Date: 11/15/2021 End Date: 10/31/2025 **Project Title:** Explaining the Surprising Simplicity of Continental Evapotranspiration

Managing Division Abbreviation: AGS **Research and Development Award:** Yes

Funding Opportunity: PD 06-5740 Climate and Large-Scale Dynamics

Assistance Listing Number(s) and Name(s): 47.050 Geosciences (See Amendment 000 for source of

funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$24,120 **Total Intended Award Amount:** \$310,789

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$334,909

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT

AND FELLOWS OF HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)
Name: Staci Jenkins
Email: sjenkins@nsf.gov
Phone: (703) 292-5042

Awarding Official

Name: Willie M. Powell Email: wpowell@nsf.gov

Managing Program Officer

Name: Eric DeWeaver Email: edeweave@nsf.gov Phone: (703) 292-8527

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to NSF Grant General Conditions (GC-1), dated 10/01/2024, available at https://www.nsf.gov/awards/managing/general_conditions.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 0.00 |
| Senior Personnel Calendar Months | 0.00 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer | 0.00 |

| 24 - 4 | |
|--|----------|
| Months | Φ.Ο. |
| Senior Personnel Amount | \$0 |
| B. Other Personnel | |
| Post Doctoral Scholars | 0.00 |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar Months | 0.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$0 |
| Other Professionals | |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | |
| Graduate Students Count | 0.00 |
| Graduate Students Amount | \$0 |
| Undergraduate Students | |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$0 |
| C. Fringe Benefits | \$0 |
| Total Salaries, Wages, Fringe | |
| Benefits $(A + B + C)$ | \$0 |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$0 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs Travel | \$24,120 |
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| I arrierpant Support Costs Office | Ψυ |

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| Total Number of Participants | 16.00 |
|---|----------|
| Total Participant Costs (F) | \$24,120 |
| G. Other Direct Costs | |
| Materials Supplies | \$0 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$0 |
| Total Other Direct Costs (G) | \$0 |
| H. Total Direct Costs (A Through G) | \$24,120 |
| I. Indirect Costs* | \$0 |
| J. Total Direct and Indirect Costs (H + I) | \$24,120 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$24,120 |
| M. Cost Sharing Proposed Level | \$0 |

Award Notice

Award Number (FAIN): 2129576

Managing Division Abbreviation: AGS

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 11/09/2021 Amendment Number: 000 Proposal Number: 2129576 Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above.

AWARD INFORMATION

Award Number (FAIN): 2129576 Award Instrument: Standard Grant

Award Date: 11/09/2021

Award Period of Performance: Start Date: 11/15/2021 End Date: 10/31/2024 **Project Title:** Explaining the Surprising Simplicity of Continental Evapotranspiration

Managing Division Abbreviation: AGS **Research and Development Award:** Yes

Funding Opportunity: PD 06-5740 Climate and Large-Scale Dynamics Assistance Listing Number(s) and Name(s): 47.050 Geosciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$310,789

Total Intended Award Amount: \$310,789

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$310,789 **Expenditure Limitation:** Not Applicable

PROJECT PERSONNEL

Principal Investigator: Email:

Institution: Harvard

University

NSF CONTACT INFORMATION

Managing Grants Official (Primary Contact)

Name: Meredith Whitty Email: mwhitty@nsf.gov Awarding Official Name: Willie M. Powell Email: wpowell@nsf.gov

Managing Program Officer Name: Eric DeWeaver Email: edeweave@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 10/04/2021, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

| A. Senior Personnel | |
|-------------------------------------|----------|
| Senior Personnel Count | 3.00 |
| Senior Personnel Calendar Months | 3.00 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer Months | 0.00 |
| Senior Personnel Amount | \$36,080 |
| B. Other Personnel | |
| Post Doctoral Scholars | |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar Months | 0.00 |
| Post Doctoral Academic | 0.00 |

| Months | |
|--|-----------|
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$0 |
| Other Professionals | |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | \$0 |
| | 2.00 |
| Graduate Students Count | 3.00 |
| Graduate Students Amount | \$122,948 |
| Undergraduate Students | |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$159,028 |
| C. Fringe Benefits | \$8,371 |
| Total Salaries, Wages, Fringe | Ψ0,371 |
| Benefits $(A + B + C)$ | \$167,399 |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$7,500 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs Travel | \$0 |
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$0 |
| Publication Costs | \$9,000 |
| 1 40110411011 00000 | Ψ2,000 |

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| Consultant Services | \$0 |
|---|-----------|
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$0 |
| Total Other Direct Costs (G) | \$9,000 |
| H. Total Direct Costs (A Through G) | \$183,899 |
| I. Indirect Costs* | \$126,890 |
| J. Total Direct and Indirect Costs (H + I) | \$310,789 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$310,789 |
| M. Cost Sharing Proposed Level | \$0 |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|-----------|--------------------|
| F&A | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2129580

Managing Division
Abbreviation: DBI

Amendment Number: 001

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: No Cost Extensions

Amendment Date: 08/16/2024 Amendment Number: 001

Proposal Number: Not Applicable

Amendment Description:

The purpose of this amendment is to extend the end date from 09/30/2024 to 09/30/2025 in accordance with the NSF Approved No-Cost Extension request submitted on 08/02/2024 without additional funds to allow for the completion of the agreed-to level of effort.

Except as modified by this amendment, the award conditions remain unchanged.

Principal Investigator: Email Co-Principal Investigator: Email: Co-Principal Investigator: Email: Corganization: PRESIDENT AND FELLOWS OF HARVARD COLLEGE Organization: PRESIDENT AND FELLOWS OF HARVARD COLLEGE

co-Principal Investigator:

Email:

Organization:

PRESIDENT AND FELLOWS OF HARVARD

COLLEGE

co-Principal Investigator:

Email:

Organization:

PRESIDENT AND FELLOWS OF HARVARD

COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact) **Name:** Termia M. Millard

Email: tmillard@nsf.gov Phone: (703) 292-7074 Awarding Official

Name: Vanessa L. Richardson Email: vlrichar@nsf.gov

Managing Program

Officer

Name: Reed Schiele

Beaman

Email: rsbeaman@nsf.gov **Phone:** (703) 292-7163

Award Notice

Award Number (FAIN): 2129580 **Managing Division Abbreviation:** DBI

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 08/04/2021 Amendment Number: 000 Proposal Number: 2129580 Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above as modified by revised budget dated 07/23/2021.

AWARD INFORMATION

Award Number (FAIN): 2129580 Award Instrument: Standard Grant

Award Date: 08/04/2021

Award Period of Performance: Start Date: 10/01/2021 End Date: 09/30/2022

Project Title: Revitalizing a field wireless network for research, education and outreach at the Harvard

Forest

Managing Division Abbreviation: DBI **Research and Development Award:** Yes

Funding Opportunity: NSF 21-501 Infrastructure Capacity for Biological Research

CFDA Number and Name: 47.074 Biological Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$161,588

Total Intended Award Amount: \$161,588

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$161,588 Expenditure Limitation: Not Applicable

PROJECT PERSONNEL

Institution: Harvard **Principal Investigator: Email:** University

Institution: Harvard **Co-Principal Investigator:** Email:

University

University

Managing Program Officer

Co-Principal Investigator: Institution: Harvard Email:

Co-Principal Investigator: Institution: Harvard

Email: University

NSF CONTACT INFORMATION

Managing Grants Official Awarding Official

(Primary Contact) Name: Vanessa L. Richardson Name: Denise L Hundley

Name: Peter H. McCartney Email: vlrichar@nsf.gov Email: pmccartn@nsf.gov Email: dhundley@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 11/12/2020, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 21-501 Infrastructure Capacity for Biological Research.

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 4.00 |
| Senior Personnel Calendar Months | 1.50 |

| Senior Personnel Academic Months | 0.00 |
|-------------------------------------|---------------|
| Senior Personnel Summer Months | 0.00 |
| Senior Personnel Amount | \$14,196 |
| B. Other Personnel | , |
| Post Doctoral Scholars | |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar Months | 0.00 |
| Post Doctoral Academic | |
| Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$0 |
| Other Professionals | |
| Other Professionals Count | 2.00 |
| Other Professionals Calendar | 2.00 |
| Months | 2.00 |
| Other Professionals Academic | 0.00 |
| Months | 0.00 |
| Other Professionals Summer | 0.00 |
| Months | 411.50 |
| Other Professionals Amount | \$11,202 |
| Graduate Students | |
| Graduate Students Count | 0.00 |
| Graduate Students Amount | \$0 |
| Undergraduate Students | |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$25,398 |
| C. Fringe Benefits | \$12,043 |
| Total Salaries, Wages, Fringe | ¢27.441 |
| Benefits $(A + B + C)$ | \$37,441 |
| D. Equipment | \$88,738 |
| E. Travel | |
| Domestic | \$0 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| | |

| Participant Support Costs Travel | \$0 |
|---|-----------|
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$16,085 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$840 |
| Total Other Direct Costs (G) | \$16,925 |
| H. Total Direct Costs (A Through G) | \$143,104 |
| I. Indirect Costs* | \$18,484 |
| J. Total Direct and Indirect Costs (H + I) | \$161,588 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$161,588 |
| M. Cost Sharing Proposed Level | \$0 |

*Indirect Cost Rates

| Item Name | Indirect Cost Rate |
|-----------|--------------------|
| MTDC | 34.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2137723

Managing Division Abbreviation: OMA Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 09/08/2021 Amendment Number: 000 Proposal Number: 2137723 Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above .

The Foundation authorizes the awardee to enter into the proposed subaward arrangement and to fund the subaward with award funds up to the amount indicated in the approved budget or NSF-approved post award request. The subaward should contain appropriate provisions consistent with Appendix B of the Research Terms and Conditions (RTC) dated November 12, 2020, or Articles 8.a.4. and 9 of the NSF Grant General Conditions (GC-1) dated November 12, 2020 (as appropriate), as well as any special conditions included in this award.

AWARD INFORMATION

Award Number (FAIN): 2137723 **Award Instrument:** Continuing Grant

Award Date: 09/08/2021

Award Period of Performance: Start Date: 09/15/2021 End Date: 08/31/2025 **Project Title:** QuIC-TAQS: Integrated Lithium Niobate Quantum Photonics Platform

Managing Division Abbreviation: OMA **Research and Development Award:** Yes

Funding Opportunity: NSF 21-553 Enabling Quantum Leap: Quantum Interconnect Challenges for

Transformational Advances in Quantum Systems

CFDA Number and Name: 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$1,235,603

Total Intended Award Amount: \$2,500,000

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$1,235,603 **Expenditure Limitation:** Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

| Fiscal Year | Increment Amount |
|-------------|------------------|
| 2022 | \$934,890 |
| 2023 | \$329,507 |

Principal Investigator: **Institution:** Harvard Email: University co-Principal Investigator: **Institution:** Stanford **Email:** University co-Principal Investigator: **Institution:** Massachusetts Email: Institute of Technology co-Principal Investigator: **Institution:** University of Email: Maryland, College Park

NSF CONTACT INFORMATION

co-Principal Investigator:

Managing Grants Official (Primary Contact) Name: Lynda Kummelt Email: lkummelt@nsf.gov

Awarding Official Name: Aprile N Roberson Email: aroberso@nsf.gov

Email:

Managing Program Officer Name: Bogdan Mihaila Email: bmihaila@nsf.gov

Institution: Harvard

University

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 11/12/2020, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement

which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 21-553 Enabling Quantum Leap: Quantum Interconnect Challenges for Transformational Advances in Quantum Systems.

| A. Senior Personnel | |
|--|-----------|
| Senior Personnel Count | 0.00 |
| Senior Personnel Calendar Months | 0.00 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer Months | 0.00 |
| Senior Personnel Amount | \$0 |
| B. Other Personnel | |
| Post Doctoral Scholars | |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar Months | 0.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$0 |
| Other Professionals | |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | |
| Graduate Students Count | 5.00 |
| Graduate Students Amount | \$166,449 |
| Undergraduate Students | |
| Undergraduate Students Count | 2.00 |
| Undergraduate Students Amount | \$5,075 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |

| Secretarial - Clerical Amount | \$0 |
|---|-------------|
| Other | |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$171,524 |
| C. Fringe Benefits | \$396 |
| Total Salaries, Wages, Fringe Benefits (A + B + C) | \$171,920 |
| D. Equipment | \$40,000 |
| E. Travel | |
| Domestic | \$9,000 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs | 4.0 |
| Stipends | \$0 |
| Participant Support Costs Travel | \$0 |
| Participant Support Costs Subsistence | \$0 |
| Participant Support Costs Other | \$0 |
| Total Number of Participants | 0.00 |
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | <u> </u> |
| Materials Supplies | \$24,559 |
| Publication Costs | \$3,000 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$725,994 |
| Other | \$58,094 |
| Total Other Direct Costs (G) | \$811,647 |
| H. Total Direct Costs (A Through G) | \$1,032,567 |
| I. Indirect Costs* | \$203,036 |
| J. Total Direct and Indirect Costs (H + I) | \$1,235,603 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$1,235,603 |
| M. Cost Sharing Proposed Level | \$0 |

*Indirect Cost Rates

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| Item Name | Indirect Cost Rate |
|--------------------------------|-----------------------|
| Modified Total Direct Costs | 69.0000% |

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Award Notice

Award Number (FAIN): 2140043

Managing Division Abbreviation: DMS

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 08/10/2021 Amendment Number: 000 Proposal Number: 2140043 Amendment Description:

It is a pleasure to inform you that \$1,000,000 is awarded to Harvard College, President & Fellows of Harvard University on behalf of the recipient of the National Science

Foundation's Alan T. Waterman Award. This award is intended to support research or advanced study in sciences. This award is presented annually to a U. S. scientist who has demonstrated outstanding research accomplishments in science or engineering, and exceptional promise for significant future achievement. The intent of Congress when it established the Alan T. Waterman Award, as expressed in P.L. 94-86 and its legislative history, was to give recognition to outstanding young scientists based on their previous achievements. Although the award takes the form of a "no strings" grant for further research or study, it is fundamentally a prize and not a consideration for future services. Further, in no sense is it to be considered as a scholarship or fellowship. (See H.R. Rep. No. 96-91, accompanying H.R. 2729, 96th Congress, 1st Session, P.L. 96-44)

This award provides funding for endeavors for a period of five (5) years in the total amount of \$1,000,000. The Harvard College, President & Fellows of Harvard University's role in receiving these funds is in the nature of institutional management of an escrow account for the use and benefit of

Any publication of any material based on or developed under this award must contain an acknowledgment of NSF support and a disclaimer in the following terms:

This material is based upon research supported by the National Science Foundation under the Alan T. Waterman Award, Grant No. DMS-2140043.

Any opinions, findings, and conclusions or recommendations expressed in this publication are those of

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| me | amnor | ana a | o noi ni | cessariiv | reneci | me | VIEWS | or ine | ∷Na⊓ona∟ | Science | Foundation |
| | | | | | | | | | | | |

The Foundation congratulates both and the Harvard College, President & Fellows of Harvard University on this prestigious award.

AWARD INFORMATION

Award Number (FAIN): 2140043 Award Instrument: Standard Grant

Award Date: 08/10/2021

Award Period of Performance: Start Date: 09/01/2021 End Date: 08/31/2026

Project Title: 2021 Waterman Award **Managing Division Abbreviation:** DMS **Research and Development Award:** Yes

Funding Opportunity: None

CFDA Number and Name: 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$1,000,000

Total Intended Award Amount: \$1,000,000

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$1,000,000 **Expenditure Limitation:** Not Applicable

PROJECT PERSONNEL

Principal Investigator:

Email:

Institution: Harvard
University

NSF CONTACT INFORMATION

Managing Grants Official (Primary Contact)

Name: Lynda Kummelt Email: lkummelt@nsf.gov Awarding Official Name: Denise M. Martin Email: dmartin@nsf.gov Managing Program Officer Name: Andrew D. Pollington Email: adpollin@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75).

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|------------------------|-----------------|----------------|---------------|--|
| | | | | |
| | | | | |
| | | | | |

Award Notice

Award Number (FAIN): 2140743

Managing Division Abbreviation: DGE

Amendment Number: 005

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Supplement Amendment Date: 12/12/2024 Amendment Number: 005 Proposal Number: 2428816 Amendment Description:

The purpose of this amendment is to:

• Add supplemental support to the award in the amount shown below in the Funding Information section.

Except as modified by this amendment, the award conditions remain unchanged.

Internships under DCL 21-013 are considered equivalent to traineeships. The National Science Foundation claims no rights to any inventions or writings that might result from its traineeship awards. However, fellows and trainees should be aware that NSF, another Federal agency, or some private party may acquire such rights through other support for particular research. Also, fellows and trainees should note their obligation to include an Acknowledgment and Disclaimer in any publication.

AWARD INFORMATION

Award Number (FAIN): 2140743 Award Instrument: Fellowship Award

Award Date: 09/02/2021

Award Period of Performance: Start Date: 09/15/2021 End Date: 08/31/2026

Project Title: Graduate Research Fellowship Program (GRFP)

Managing Division Abbreviation: DGE **Research and Development Award:** Yes

Funding Opportunity: None

Assistance Listing Number(s) and Name(s): 47.076 Education and Human Resources (See Amendment 000 for source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$45,215 **Total Intended Award Amount:** \$4,958,032

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$43,051,421

PROJECT PERSONNEL

Principal Investigator:

Email: 2 fas.harvard.edu

Organization:
PRESIDENT AND
FELLOWS OF
HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)

Name: Denisa Traboini

Email: dtraboin@nsf.gov Phone: (703) 292-4916 **Awarding Official**

Name: Tracy N. Shields Email: tshields@nsf.gov

Managing Program

Officer

Name: Christopher L. Hill Email: chill@nsf.gov Phone: (703) 292-8776

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to NSF Grant General Conditions (GC-1), dated 10/01/2024, available at https://www.nsf.gov/awards/managing/general_conditions.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

| A. Senior Personnel | |
|-------------------------------------|------|
| Senior Personnel Count | 1.00 |
| Senior Personnel Calendar Months | 0.00 |
| Senior Personnel Academic Months | 0.00 |
| Senior Personnel Summer | 0.00 |

| Months | |
|---------------------------------------|----------|
| Senior Personnel Amount | \$0 |
| B. Other Personnel | ΨΟ |
| Post Doctoral Scholars | |
| Post Doctoral Count | 0.00 |
| Post Doctoral Calendar Months | 0.00 |
| Post Doctoral Academic Months | 0.00 |
| Post Doctoral Summer Months | 0.00 |
| Post Doctoral Amount | \$0 |
| Other Professionals | \$0 |
| Other Professionals Count | 0.00 |
| Other Professionals Calendar | 0.00 |
| Months | 0.00 |
| Other Professionals Academic Months | 0.00 |
| Other Professionals Summer Months | 0.00 |
| Other Professionals Amount | \$0 |
| Graduate Students | |
| Graduate Students Count | 1.00 |
| Graduate Students Amount | \$18,500 |
| Undergraduate Students | |
| Undergraduate Students Count | 0.00 |
| Undergraduate Students Amount | \$0 |
| Secretarial - Clerical | |
| Secretarial - Clerical Count | 0.00 |
| Secretarial - Clerical Amount | \$0 |
| Other | , |
| Other Count | 0.00 |
| Other Amount | \$0 |
| Total Salaries and Wages (A+B) | \$18,500 |
| C. Fringe Benefits | \$0 |
| Total Salaries, Wages, Fringe | |
| Benefits $(A + B + C)$ | \$18,500 |
| D. Equipment | \$0 |
| E. Travel | |
| Domestic | \$15,143 |
| International | \$0 |
| F. Participant Support Costs | |
| Participant Support Costs Stipends | \$0 |
| Participant Support Costs Travel | \$0 |
| Participant Support Costs | \$0 |
| Subsistence | |
| Participant Support Costs Other | \$0 |

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| Total Number of Participants | 0.00 |
|---|----------|
| Total Participant Costs (F) | \$0 |
| G. Other Direct Costs | |
| Materials Supplies | \$2,299 |
| Publication Costs | \$0 |
| Consultant Services | \$0 |
| Computer Services | \$0 |
| Subawards | \$0 |
| Other | \$4,738 |
| Total Other Direct Costs (G) | \$7,037 |
| H. Total Direct Costs (A Through G) | \$40,680 |
| I. Indirect Costs* | \$4,535 |
| J. Total Direct and Indirect Costs (H + I) | \$45,215 |
| K. Fees | \$0 |
| L. Total Amount of Request (J) OR (J + K) | \$45,215 |
| M. Cost Sharing Proposed Level | \$0 |

Award Notice

Award Number (FAIN): 2140743

Managing Division Abbreviation: DGE

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 MASSACHUSETTS AVE 5th Floor Cambridge, MA 02138-5369

Official Awardee Email Address:

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project Amendment Date: 09/02/2021 Amendment Number: 000 Proposal Number: 2140743 Amendment Description:

The National Science Foundation hereby awards a Fellowship Award for support of the project described in the proposal referenced above .

The provisions of the Graduate Research Fellowship Program (GRFP) program solicitation (NSF 21-602) and "Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials" (NSF 16-104) are available at https://www.nsf.gov/pubs/2021/nsf21602/nsf21602.pdf and https://www.nsf.gov/pubs/2016/nsf16104/nsf16104.pdf, respectively, are applicable to this grant. If any inconsistencies between the award terms and conditions and the Program Solicitation or Guide are discovered, the Program Solicitation and Guide shall take precedence.

Available grant balances may be used for any GRFP Fellow who is in compliance with applicable program guidelines. Thus, funds from prior year grants may be used to support any NSF Graduate Research Fellow duly enrolled at a GRFP Institution in an eligible advanced degree program in a field supported by NSF (see the "Program Solicitation" and "Guide" for guidance).

Each institution, in accepting the funds, also certifies that the Fellows are eligible to receive the Fellowship under these terms and conditions. The institution has full responsibility for the conduct of the project or activity supported under an NSF grant and for the results achieved.

Funds from this award and/or any amendments to this award are expected to be fully expended in support of the GRFP Fellows prior to expending funds from any newly issued GRFP award.

The GRFP Administrative Guide shall take precedence in the event of any Terms and Conditions conflicts.

AWARD INFORMATION

Award Number (FAIN): 2140743 Award Instrument: Fellowship Award

Award Date: 09/02/2021

Award Period of Performance: Start Date: 09/15/2021 End Date: 08/31/2026

Project Title: Graduate Research Fellowship Program (GRFP)

Managing Division Abbreviation: DGE **Research and Development Award:** Yes

Funding Opportunity: None

CFDA Number and Name: 47.076 Education and Human Resources

FUNDING INFORMATION

Amount Obligated by this Amendment: \$4,958,032

Total Intended Award Amount: \$4,958,032

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$4,958,032 **Expenditure Limitation:** Not Applicable

PROJECT PERSONNEL

Principal Investigator:

Email:

Institution: Harvard

University

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)

Name: Cartia Brown-Morgan

Email: cbrownmo@nsf.gov

Awarding Official

Name: LeVar R. Farrior

Email: lfarrior@nsf.gov

Managing Program

Officer

Name: Christopher Leigh

Hill

Email: chill@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 11/12/2020, available at https://www.nsf.gov/awards/managing/rtc.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

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|------------------------|-----------------|----------------|---------------|--|
| | | | | |
| | | | | |
| | | | | |

Award Notice

Award Number (FAIN): 2141382

Managing Division Abbreviation: EAR Amendment Number: 002

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address:

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Supplement Amendment Date: 11/22/2024 Amendment Number: 002 Proposal Number: 2452404 Amendment Description:

The purpose of this amendment is to:

• Add supplemental support to the award in the amount shown below in the Funding Information section.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 2141382 Award Instrument: Continuing Grant

Award Date: 01/05/2022

Award Period of Performance: Start Date: 01/15/2022 End Date: 12/31/2025

Project Title: Collaborative Research: Coupled flow-geomechanical models applied to assess

earthquake triggering in tectonically active regions - The Los Angeles basin, CA

Managing Division Abbreviation: EAR **Research and Development Award:** Yes

Funding Opportunity: NSF 17-554 Geophysics

Assistance Listing Number(s) and Name(s): 47.050 Geosciences (See Amendment 000 for source of

funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$25,955 **Total Intended Award Amount:** \$303,673

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$329,628

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT AND FELLOWS OF HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)
Name: Angela A. Turner

Email: aturner@nsf.gov Phone: (703) 292-7524 **Awarding Official**

Name: Angela A. Turner Email: aturner@nsf.gov

Managing Program Officer

Name: Wendy Panero Email: wpanero@nsf.gov Phone: (703) 292-5058

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to NSF Grant General Conditions (GC-1), dated 10/01/2024, available at https://www.nsf.gov/awards/managing/general conditions.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

| A. Senior Personnel | | | | |
|-------------------------------------|------|--|--|--|
| Senior Personnel Count | 1.00 | | | |
| Senior Personnel Calendar Months | 0.00 | | | |
| Senior Personnel Academic Months | 0.00 | | | |
| Senior Personnel Summer Months | 0.00 | | | |
| Senior Personnel Amount | \$0 | | | |
| B. Other Personnel | | | | |
| Post Doctoral Scholars | | | | |
| Post Doctoral Count | 1.00 | | | |
| Post Doctoral Calendar Months | 1.00 | | | |